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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) An image processing apparatus with a heavy-load processing part that carries out a heavy-load operation requiring a longer processing time as compared with other ordinary processing parts, the imaging processing apparatus comprising:

a plurality of heavy-load processing units arranged in parallel with each other;

a data distribution unit configured to distribute quantized image-related data to each of the heavy-load processing units; and

a data synthesizing unit configured to synthesize multiple data sets output from the heavy-load processing units so as to produce a sequence of heavy-load processed data that is substantially the same as data obtained if a single heavy-load processing unit is employed.

2. (original) The image processing apparatus according to claim 1, wherein the data distribution unit has a memory that stores said image-related data, and the data distribution unit outputs a prescribed-portion of the image-related data stored in the memory to one of the heavy-load processing units.

3. (original) The image processing apparatus according to claim 1, wherein the data distribution unit distributes the image-related data directly to each of the heavy-load processing units based on the amount of a portion of the image-related data corresponding to one of the heavy-load processing units.

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4. (original) The image processing apparatus according to any one of claims 1 through 3, wherein the data synthesizing unit stores said multiple data sets output from the respective heavy-load processing units in a second memory so that the stored data are substantially the same as data obtained if a single heavy-load processing unit is employed, and wherein when operations of all the heavy-load processing units have been completed, the data synthesizing unit reads and outputs the stored data from the second memory.

5. (currently amended) The image processing apparatus according to [[an]] any one of claims 1 through 3, wherein the data synthesizing unit has multiple temporary memories, each being provided to store the data set output from one of said multiple heavy-load processing units, and wherein when operations of all the heavy-load processing units have been completed, the data synthesizing unit reads and outputs the data from the temporary memories so that the output data are substantially the same as data obtained if a single heavy-load processing unit is employed in the image processing apparatus.

6. (currently amended) The image processing apparatus according to any one of claims 1 through [[5]] 3, wherein said other ordinary processing part deals with the image-related data on a data-block basis, while the heavy-load processing units deal with the image-related data on a bit-data basis.

7. (currently amended) The image processing apparatus according to any one of claims 1 through [[6]] 3, wherein the image processing apparatus is a JPEG 2000 image processing apparatus, and each of said heavy-load processing units carries out coefficient modeling and MQ

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coding.

Claims 8-10 (canceled).

11. (new) An image processing apparatus with a heavy-load processing part that carries out a heavy-load operation requiring a longer processing time as compared with other ordinary processing parts, the imaging processing apparatus comprising:

a plurality of heavy-load processing units arranged in parallel with each other;

a data distribution unit configured to distribute image-related data to each of the heavy-load processing units; and

a data synthesizing unit configured to synthesize multiple data sets output from the heavy-load processing units so as to produce a sequence of heavy-load processed data that is substantially the same as data obtained if a single heavy-load processing unit is employed,

wherein the data synthesizing unit stores said multiple data sets output from the respective heavy-load processing units in a second memory so that the stored data are substantially the same as data obtained if a single heavy-load processing unit is employed, and wherein when operations of all the heavy-load processing units have been completed, the data synthesizing unit reads and outputs the stored data from the second memory.

12. (new) An image processing apparatus with a heavy-load processing part that carries out a heavy-load operation requiring a longer processing time as compared with other ordinary processing parts, the imaging processing apparatus comprising:

a plurality of heavy-load processing units arranged in parallel with each other;

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a data distribution unit configured to distribute image-related data to each of the heavy-load processing units; and

a data synthesizing unit configured to synthesize multiple data sets output from the heavy-load processing units so as to produce a sequence of heavy-load processed data that is substantially the same as data obtained if a single heavy-load processing unit is employed,

wherein the data synthesizing unit has multiple temporary memories, each being provided to store the data set output from one of said multiple heavy-load processing units, and wherein when operations of all the heavy-load processing units have been completed, the data synthesizing unit reads and outputs the data from the temporary memories so that the output data are substantially the same as data obtained if a single heavy-load processing unit is employed in the image processing apparatus.

13. (new) An image processing apparatus with a heavy-load processing part that carries out a heavy-load operation requiring a longer processing time as compared with other ordinary processing parts, the imaging processing apparatus comprising:

a plurality of heavy-load processing units arranged in parallel with each other;

a data distribution unit configured to distribute image-related data to each of the heavy-load processing units; and

a data synthesizing unit configured to synthesize multiple data sets output from the heavy-load processing units so as to produce a sequence of heavy-load processed data that is substantially the same as data obtained if a single heavy-load processing unit is employed,

wherein said other ordinary processing part deals with the image-related data on a data-block basis, while the heavy-load processing units deal with the image-related data on a bit-data

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basis.